

II. AMENDMENTS TO THE CLAIMS:

Listing of Claims:

- 1-44. (Cancelled)
45. (Currently amended): A multi-channel system for classifying particles according to one or more characteristics of the particles, said system comprising:
a plurality of flow cytometry units each of which is operable to classify particles in a mixture of particles by interrogating a stream of fluid containing said particles using a beam of pulsed electromagnetic radiation;
said units sharing an integrated platform comprising a common source of said pulsed electromagnetic radiation and a common processor for receiving and processing information from the units.
46. (Cancelled)
47. (Original): The system of claim 45 wherein said particles are cells.
48. (Original): The system of claim 45 wherein said particles are sperm cells.
49. (Previously presented): The system of claim 45 wherein said integrated platform further comprises a common input for controlling operation of the units.
50. (Cancelled)
51. (Currently amended): The system of claim 45 wherein said common source of said pulsed electromagnetic radiation comprises a single pulsed laser beam.

52. (Currently amended): The system of claim 51 further comprising a beam splitting system for splitting the single pulsed laser beam into multiple beams and directing the multiple beams into optics systems of respective flow cytometry units.
53. (Previously presented): The system of claim 45 wherein said integrated platform further comprises a common housing, said flow cytometry units comprising interchangeable modules removably mounted in the housing.
54. (Original): The system of claim 45 wherein each flow cytometry unit comprises an epi-illumination optics system for interrogating a respective fluid stream.
55. (Previously presented): The system of claim 45 wherein said processor is operable to output an indication of the fluorescence intensity measured by each unit.
56. (Previously presented): The system of claim 45 wherein said processor is operable to output an indication of the rate at which each unit is separating particles.
57. (Previously presented): The system of claim 45 wherein said processor is operable to output an indication of particle staining variations.
58. (Previously presented): The system of claim 45 wherein said processor is operable to output an indication of a decision boundary used by each unit for discriminating between particles.
59. (Original): The system of claim 45 wherein said flow cytometry units are adapted to operate in parallel.
60. (Original): The system of claim 45 wherein said plurality of flow cytometry units are operable to sort the particles.

61. (Previously presented): The system of claim 60 wherein said plurality of flow cytometry units comprises a jet-in-air droplet sorting flow cytometry unit.
62. (Previously presented): The system of claim 45 wherein the common processor receives and processes said information to permit evaluation of the operation of one unit relative to another unit.
63. (Previously presented): The system of claim 45 wherein the processor is operable to process the output signals in real time.
64. (Previously presented): The system of claim 45 wherein said common processor is operable to send control signals to the flow cytometry units during a sorting process to adjust their operation as a function of said information received by the common processor, and wherein the flow cytometry units are responsive to the control signals.
- 65-80. (Cancelled)
81. (Previously presented): The system of claim 45 wherein said integrated platform further comprises at least one of: (1) a common supply of particles; (2) a common housing; (3) a common input for controlling operation of the units; and (4) a common fluid delivery system for delivering fluid containing said particles to said flow cytometry units.